

**REMARKS**

This Application has been carefully reviewed in light of the Office Action mailed July 25, 2005 ("*Office Action*"). Claims 1-4, 6-11, and 13-18 were pending in the Application. The Examiner rejects all claims and objects to Claims 2, 6, 9, 13, and 17. Applicant amends Claims 2, 6, 9, 13, and 17. Applicant respectfully requests reconsideration and favorable action in this case.

**Claim Objections**

The Examiner objects to Claims 2, 6, 9, 13, and 17 because of informalities. Applicant amends Claims 2, 6, 9, 13, and 17 to correct typographical errors as suggested by the Examiner.

**Claim Rejections - 35 U.S.C. § 103**

The Examiner rejects Claims 1-4, 6-11 and 13-18 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,138,167 to Heller et al. ("*Heller*") in view of U.S. Patent No. 5,592,610 to Chittor ("*Chittor*"). First, Applicant respectfully traverses the rejection on the ground that *Heller* and *Chittor*, whether taken alone or in combination, fail to teach or suggest all limitations of the claims. Second, Applicant respectfully submits that *Heller* teaches away from the proposed modification of *Heller*, and thus the modification is improper. M.P.E.P. § 2145.

**A. The claims are patentably distinct over *Heller* and *Chittor* because the references fail to disclose all claim limitations.**

Applicant respectfully submits that *Heller* and *Chittor*, whether taken alone or in combination, fail to teach or suggest all limitations of the claims. Consider Claim 1, which recites:

A sub-network of an optical communication network, the sub-network comprising:

- four nodes each having two input ports and two output ports;
- a first one of the nodes having the input ports and one of the output ports coupled to other ones of the nodes, and wherein the other output port of the first node is operable to send signals outside of the sub-network;
- a second one of the nodes having the output ports and one of the input ports coupled to other ones of the nodes, and wherein the other input port of

the second node is operable to receive signals from outside of the sub-network;

a third one of the nodes having the output ports and one of the input ports coupled to other ones of the nodes, and wherein the other input port of the third node is operable to receive signals from outside of the sub-network; and

a fourth one of the nodes having the input ports and one of the output ports coupled to other ones of the nodes, and wherein the other output port of the fourth node is operable to send signals outside of the sub-network; wherein each of the nodes is operable to:

receive a packet comprising a destination address;

determine an output port from the sub-network based on the destination address; and

route the packet to one of the first node and the fourth node corresponding to the determined output port.

Applicant respectfully submits that *Heller* and *Chittor*, whether taken alone or in combination, fail to teach or suggest every element of Claim 1.

Among other aspects, the references fail to teach or suggest a sub-network comprising “a first one of the nodes having the input ports and one of the output ports coupled to other ones of the nodes, and wherein the other output port of the first node is operable to send signals outside of the sub-network,” as required by Claim 1.

The Examiner agrees that *Heller* does not disclose this limitation, but instead proposes a modification to the teaching of *Heller*. In support, the *Office Action* points to column 14, lines 36-42 for the proposition that “joining the four node sub-network to other four node sub-networks would have been obvious to one of ordinary skill in the art at the time of the invention.” (*Office Action*, para. 4, pg. 3). However, the cited portion of *Heller* does not support this proposition. The cited portion merely indicates that *Heller*’s invention “may be used in connection with multiprocessor computer systems having a variety of numbers of processing nodes.” Using the disclosed network connectivity scheme of *Heller* with a varying number of processing nodes in a single network fails to teach or suggest joining one particular four-node sub-network with a second four-node sub-network. Instead, *Heller* indicates that single nodes can be added as shown, for example, by Figure 1 through Figure 3. This fails, however, to teach or suggest any modification of *Heller* to provide “a first one of the nodes having the input ports and one of the output ports coupled to other ones of the nodes, and wherein the other output port of the first node is operable to send signals outside of the sub-network,” as required by Claim 1.

Likewise, *Chittor* fails to teach or suggest those aspects of Claim 1. *Chittor* discloses “[a] method and apparatus for enhancing the fault-tolerance of a network” through the use of routing techniques. (Abstract). *Chittor* does not teach or suggest “a first one of the nodes having the input ports and one of the output ports coupled to other ones of the nodes, and wherein the other output port of the first node is operable to send signals outside of the sub-network,” as required by Claim 1.

Applicant thus respectfully submits that *Heller* and *Chittor*, whether taken alone or in combination, fail to teach or suggest every element of Claim 1. Likewise, independent Claims 8 and 15 include limitations that, for substantially similar reasons, are not taught or suggested by the references. Because *Heller* and *Chittor*, whether taken alone or in combination, fail to teach or suggest every element of independent Claims 1, 8, and 15, Applicant respectfully requests reconsideration and allowance of Claims 1, 8, and 15, and their respective dependent claims.

**B. The § 103 rejection is improper because *Heller* teaches away from the proposed modification.**

Applicant respectfully submits that *Heller* teaches away from the proposed modification of *Heller*, and thus the modification is improper. M.P.E.P. § 2145. Consider, for example, Claim 15, which recites:

A sub-network of an optical communication network, the sub-network comprising:

a first node, a second node, a third node, and a fourth node interconnected to form a first unidirectional communication ring with direct communications links from the fourth node to the third node, the third node to the second node, the second node to the first node, and the first node to the fourth node;

the second node further connected to the fourth node to form a second unidirectional communication ring with direct communications links from the second node to the fourth node, the fourth node to the third node, and the third node to the second node; and

the third node further connected to the first node to form a third unidirectional communication ring with direct communications links from the third node to the first node, the first node to the fourth node, and the fourth node to the third node; wherein:

an output port of the first node couples to an input port of a node in a second sub-network, an input port of the second node couples to an output port of a node in the second sub-network, an input port of the third node couples to an output port of a node in a third sub-network, and an output port of the fourth node couples to an input port of a node in the third sub-network, and wherein:

each of the first node, the second node, the third node, and the fourth node is operable to receive a packet with a destination address indicating a node external to the sub-network and to determine a selected output port chosen from the output port of the first node and the output port of the fourth node, the selected output port chosen to minimize the number of intermediate sub-networks between the selected output port and the external node indicated by the destination address.

Claim 15 requires that each node be connected to four other nodes. However, *Heller* requires that “[i]n the interconnection subsystem in accordance with the invention, the degree of each switch is selected to be three, that is, each processing node is connected to at most three other processing nodes.” (col. 3, line 67 - col. 4, line 3; emphasis added). Thus, *Heller* teaches away from the proposed modification, which would require one node in a four-node network (already connected to three other nodes) to additionally connect to another node in another four-node network.

Applicant thus respectfully submits that *Heller* teaches away from Claim 15. For at least this reason, Applicant respectfully requests reconsideration and allowance of Claim 15, and its respective dependent claims.

**CONCLUSION**

Applicant has made an earnest attempt to place the Application in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicant respectfully requests full allowance of all pending claims. If the Examiner feels that a telephone conference or an interview would advance prosecution of the Application in any manner, the undersigned Attorney for Applicant stands ready to conduct such a conference at the convenience of the Examiner.

No fee is believed to be due. However, the Commissioner is hereby authorized to charge any extra fees or credit any overpayments to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

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